IN THE DRAWINGS:

Please delete Figures 2 and 3 and insert the following revised Figures 2 and 3 therefore. Specifically, each of Figures 2 and 3 have been revised to delete the word "port" in items 52, 56, 60, 100, and 108 and insert the word "prot" in accordance with the specification. Applicant submits that no new matter has been added.

Remarks

The Office Action dated August 23, 2007, has been carefully reviewed and the foregoing amendment and following remarks have been made in consequence thereof.

Claims 1-27 are pending in this application. Claims 1-5, 7, 10, 13-19, 21, and 25-26 are rejected. Claims 6, 8, 9, 11, 12, 20, and 22-24 are objected to. Claim 27 is newly added. It is respectfully submitted that the pending claims define allowable subject matter.

Regarding the objection to the Abstract, the abstract has been amended to less than 150 words. Accordingly, Applicant respectfully requests the objection to the Abstract be withdrawn.

Regarding the objection to Claim 5, Applicant submits that Claim 5, like Claim 3, depends directly from independent Claim 1. Moreover, the claim element "a 1+1 protection scheme" is being introduced for the first time in each of Claims 5 and 3, and therefore the recitation "a" is the proper recitation vs. the recitation "the" as suggested in the Office Action.

Regarding Claims 22 and 23, as stated above, the claim element "a defect" is being introduced for the first time in each of Claim 22 and 23 which each depend from Claim 15, and therefore the recitation "a defect" is the proper recitation vs. the recitation "the defect" as suggested in the Office Action.

Regarding Claim 24, as stated above, the claim element "an intra-leg protection scheme" is being introduced for the first time in Claim 24 which depends from Claim 15, and therefore the recitation "an intra-leg protection scheme" is the proper recitation vs. the recitation "the intra-leg protection scheme" as suggested in the Office Action.

For at least the reasons stated above, Applicant respectfully requests the objections to Claims 5, 22, 23, and 24 be withdrawn.

Turning to the prior art rejections, Claims 1-3, 7, 13, 15-16, 18-19, 21 and 25 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Anderson et al. (U.S. Patent No. 5,838,924). Claims 4, 10, 14 and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson in view of DeBoer et al. (U.S. Patent App. No. 2004/0208118). Claims 5 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of DeBoer and further in view of Magill et al. (U.S. Patent No. 6,606,297). Claims 6, 8-9, 11-12, 20, and 22-24 are objected to as being dependent upon a rejected base claim.

Anderson describes an Asynchronous Transfer Mode (ATM) data link layer that is configured to be carried on a physical layer such as SONET. The ATM data link layer is utilized for Virtual Path Group (VPG) switching and includes a source node 101, an intermediate node 102, and a destination node 103. As stated in Anderson, the VPG working and protection VPG are maintained entirely within the network element management function and an algorithm is utilized to determine appropriate VPG protection switch and signaling actions. For example, during operation, a reception of VPseg-AIS is continuously monitored. Upon confirmed reception of VPs-AIS with the VPI associated with the particular VPG, the Defect Type Indication (DTI) value encoded in the AIS OAM cell is checked. If DTI=0, then a physical layer-related protection switch first hold-off timer is started. This first timer allows a delay or suppression of the VPG protection switching within a pre-specified hold-off time because the Physical Layer defect may be cleared by an enabled Physical Layer protection capability. If DTI=0, then an ATM layer-related protection switch second hold-off timer is started. This second timer may be set to zero (0) to enable fast ATM protection switching. Following the expiration of the second timer, the VPG selector is switched to the protection VPG. As such, Anderson describes a method of providing protection switching of individual ATM virtual channels that are carried on a sub-network system in order to restore ATM specific defects.

Anderson further describes that a received delineated ATM cell stream from the Fabric Interface is mapped to a SONET payload with SONET Path Overhead added. This SONET Path/Payload stream is then framed with SONET Line and Section Overhead added at the SONET Overhead Insertion Processor.

Claim 1 recites a sub-network connection system that includes line modules configured to receive bridged traffic signals over individual corresponding channels. The line modules are grouped into sets at a lower protection layer. The sets of line modules are organized into working legs and protection legs at an upper protection layer. The line modules are activated/deactivated based on different upper and lower protection schemes associated with the upper and lower protection layers. State maps are associated with each of the line modules. The state maps store state data that activates and deactivates the line modules. The state maps are updated in accordance with the lower protection scheme to perform intra-leg switching between the line modules in one of the working and protection legs. The state maps are updated in accordance with the upper protection scheme to perform inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the

working and protection legs. A network control module is interconnected with the line modules. The network control module performs inter-leg switching by updating the state data in the state maps for corresponding line modules in associated working and protection legs.

It is respectfully submitted that Anderson does not describe or suggest that line modules are grouped into sets at a lower protection layer, the sets of line modules are organized into working legs and protection legs at an upper protection layer, or that the line modules are activated/deactivated based on different upper and lower protection schemes associated with the upper and lower protection layers. Moreover, Anderson does not describe or suggest that state maps associated with each of the line modules, the state maps store state data that activates and deactivates the line modules, the state maps are updated in accordance with the lower protection scheme to perform intra-leg switching between the line modules in one of the working and protection legs, or that the state maps are updated in accordance with the upper protection scheme to perform inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the working and protection legs.

Additionally, if the rejection is uphold, Applicant respectfully request that additional detail from Anderson that is being recited to reject the claims be provided to allow the Applicant an adequate opportunity to respond to the rejections. For example, the Office Action asserts on Page 3, that Anderson describes "the line modules are activated/deactivated based on different upper and lower protection schemes associated with the upper and lower protection layers (see column 4 lines 50-67). As discussed above, at column 4 lines 50-67, Anderson describes that a first timer allows a delay or suppression of the VPG protection switching within a pre-specified hold-off time because the Physical Layer defect may be cleared by an enabled Physical Layer protection capability. This second timer may be set to zero (0) to enable fast ATM protection switching. Following expiration of the second timer, either Physical Layer-related or ATM Layer-related, and confirmation that the Physical Layer defect has not cleared, and that the VPG for which the VPI belongs is available (i.e. not indicating any VP-AIS or LOC), the VPG selector is switched to the protection VPG. As such, Anderson does not describe sets of line modules that are activated/deactivated based on different upper and lower protection schemes associated with the upper and lower protection layers.

Moreover, the Office Action further asserts that Anderson describes that state maps are used to store data that activates and deactivates the line modules (see column 9 lines 6-41), and the state maps are updated in accordance with the lower protection scheme to perform intraleg

switching between the line modules in one of the working and protection legs (see column 2 lines 9-18). At column 2 lines 9-18, Anderson is silent regarding state maps. At column 9, lines 6-41, Anderson describes that a delineated ATM cell stream from the fabric interface is mapped to a SONET payload with SONET Path Overhead added. Anderson does not describe or suggest at column 9, lines 6-41 that state maps are associated with line modules. Nor does Anderson describe that state maps store state data that activate and deactivate the line modules. Anderson also does not describe that the state maps are updated in accordance with the lower protection scheme to perform intra-leg switching between the line modules in one of the working and protection legs, or that the state maps are updated in accordance with the upper protection scheme to perform inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the working and protection legs. Accordingly, claim 1 is submitted to be patentable over Anderson.

With respect to Claim 2, Anderson does not describe or suggest that line modules constitute I/O boards and the network control module performs a switch operation between a working I/O board in the working leg and a working I/O board in the protection leg when a defect is experienced in the traffic signal. Rather, as discussed above, Anderson does not describe that line modules are grouped into sets. Rather, as shown in Figure 1, Anderson describes a single a source node 101, a single intermediate node 102, and a single destination node 103. Since, Anderson does not describe line modules being grouped into sets at a lower protection layer, and that the sets of line modules are organized into working legs and protection legs at an upper protection layer. Anderson also does not describe that the line modules constitute I/O boards, nor does Anderson describe that the network control module performs a switch operation between a working I/O board in the working leg and a working I/O board in the protection leg when a defect is experienced in a traffic signal. Accordingly, Claim 2 is submitted to be patentable over Anderson.

Claim 15 recites a method for protection switching in a sub-network connection. The method includes receiving traffic signals at line modules that are grouped into sets, where the sets of line modules are organized into working legs and protection legs, and storing state data in state maps associated with each of the line modules. The method further includes inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the working and protection legs by updating the state maps in accordance

with an inter-leg protection scheme, and activating and deactivating the line modules based on updates to the state maps.

As discussed above, Anderson does not describe or suggest receiving traffic signals at line modules that are grouped into sets, where the sets of line modules are organized into working legs and protection legs. Anderson also does not describe or suggest storing state data in state maps associated with each of the line modules. Rather, as discussed above, Anderson describes that a delineated ATM cell stream from the fabric interface is mapped to a SONET payload with SONET Path Overhead added. As such, Anderson does not describe inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the working and protection legs by updating the state maps in accordance with an inter-leg protection scheme, and activating and deactivating the line modules based on updates to the state maps.

Additionally, if the Examiner continues to uphold the rejection of Claim 15, Applicant respectfully requests that the Examiner provide additional details and label numbers from Anderson that are being used to reject the claims to allow the Applicant an adequate opportunity to respond to the rejections. For example, the Office Action does not provide reference labels for the line modules that are grouped into sets to enable the Applicant to determine whether Anderson describes organizing sets of line modules into working legs and protection legs. The Office Action also does not state where Anderson describes storing state data in state maps associated with each of the line modules. Nor does the Office Action clearly indicate where Anderson describes inter-leg switching between a first line module in one of the working and protection legs and a second line module in another of the working and protection legs by updating the state maps in accordance with an inter-leg protection scheme, and activating and deactivating the line modules based on updates to the state maps. Accordingly, Claim 15 is submitted to be patentable over Anderson.

Turning to the remaining dependent claims, Anderson fails to teach or suggest each and every limitation included in the dependent claims. Accordingly, Claims 3, 7, and 13 depending from Claim 1 and Claims 16, 18-19, 21, and 25 depending from Claim 15 define allowable subject matter.

With respect to Claims 4, 10, 14, and 26, DeBoer describes a 1:N shared mesh protection system that defines a protection path associated with N working paths. DeBoer also describes a connection table having connection information of the network elements associated with the

protection path and the working paths. However, DeBoer, considered alone or in combination, does not make up for the deficiencies of Anderson with respect to Claim 1 and 15. Accordingly, Claims 4, 10, 14, and 26 are submitted to be patentable over the cited art for at least the reasons set forth above.

With respect to Claims 5 and 17, Magill describes that end-to-end path protection is used in SONET Dual-Fed Unidirectional Switched Rings (UPSRs). Magill also describes that in addition to SONET, self-healing rings (SHRs) are proposed for other connection oriented networks, such as wavelength division multiplexed (WDM) networks and ATM LANs. However, Magill, considered alone or in combination, does not make up for the deficiencies of Anderson or DeBoer with respect to Claims 1 and 15. Accordingly, Claims 5 and 17 are submitted to be patentable over the cited art for at least the reasons set forth above.

Claims 6, 8-9, 11-12, 20, and 22-24 are objected to as being depended on a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim. Applicant respectfully submits that Claims 1 and 15 are patentable over Anderson. Since Claims 6, 8-9, 11-12, 20, and 22-24 each depend directly from independent Claims 1 and 15, respectively, Claims 6, 8-9, 11-12, 20, and 22-24 likewise are patentable over Anderson.

With respect to newly added Claim 27. Claim 27 depends directly from Claim 1 which is submitted to be patentable over Anderson. Accordingly, Claim 27 is submitted to be patentable over any of Anderson, DeBoer, or Magill.

In view of the foregoing amendments and remarks, all the Claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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